

CLAIMS

1. An operating screw comprising:
a core¹ having a rotation axis; and
5 an outer member enclosing the core and formed with a spiral groove;
wherein the outer member includes a first slide² surface which has a center of curvature residing on the rotation axis and has a predetermined radius of curvature,
10 the outer member also including a first retreat³ surface which is spaced apart from the rotation axis by a distance smaller than the radius of curvature of the first slide² surface.
- 15 2. The operating screw according to claim 1, wherein the outer member is made of a resin material by injection molding.
- 20 3. The operating screw according to claim 1, wherein the first retreat³ surface is flat.
4. The operating screw according to claim 1, wherein the outer member includes a second slide surface which has a center of curvature residing on the rotation axis and has
25 a radius of curvature equal to the radius of curvature of the first slide surface.

5. The operating screw according to claim 4, wherein the first slide surface and the second slide surface are spaced from each other about the rotation axis, the first retreat³ surface being disposed between the first slide surface and the second slide surface.

6. The operating screw according to claim 1, wherein the outer member includes a flat second retreat surface separated from the first retreat surface by the spiral¹¹ groove.

7. The operating screw according to claim 6, wherein the first and the second retreat surfaces are aligned with each other based on a reference^{AX(L)} line parallel to the rotation axis.

8. The operating screw according to claim 7, wherein the spiral¹¹ groove has a maximum width at a position corresponding to the reference line.

9. The operating screw according to claim 8, wherein the spiral¹¹ groove is provided with a cutout^{4(4a) - 4(4b)} at a position corresponding to the reference line to realize the maximum width.

10. A driving mechanism comprising:

an operating screw provided with a spiral groove and
a spiral projection defined by the spiral groove; and

a hollow cylindrical carriage provided with threads
5 coming into engagement with the spiral groove;

wherein the spiral projection is provided with both
a plurality of curved² surfaces spaced from each other and
a plurality of flat³ surfaces alternating with the curved
surfaces.

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11. The driving mechanism according to claim 10, further
comprising a guide⁶ rod parallel to the operating screw
and a slider⁷ slidable on the guide rod⁶, wherein the
carriage⁵ is linked to the slider⁷.

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12. A printer comprising;

a photosensitive drum;

a charging corona wire arranged along the drum;

a cleaning member held in contact with the corona
20 wire; and

a driving mechanism that moves the cleaning member
longitudinally of the corona wire;

wherein the driving mechanism includes an operating
screw provided with a spiral¹¹ projection, the spiral
25 projection including both a plurality of curved² surfaces
spaced from each other and a plurality of flat³ surfaces
alternating with the curved surfaces.